

08 OCT 2004

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.

Application Serial Number: 10/S10,941
Source: PCT
Date Processed by STIC: 10/22/04

ENTERED

08 OCT 2004

**CRF Errors Edited by the STIC Systems
Branch**

Serial Number: 10510,941

CRF Edit Date: 10-22-04
Edited by: KQ

☐ Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line

☐ Corrected the SEQ ID NO. Sequence numbers edited were:

☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

☒ Deleted: ☒ invalid beginning/end-of-file text ; ☐ page numbers

☐ Inserted mandatory headings/numeric identifiers, specifically:

☐ Moved responses to same line as heading/numeric identifier, specifically:

☐ Other:

08 OCT 2004



PCT

RAW SEQUENCE LISTING

DATE: 10/22/2004

PATENT APPLICATION: US/10/510,941

TIME: 09:18:29

Input Set : A:\pto.kd.txt

Output Set: N:\CRF4\10222004\J510941.raw

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3 <110> APPLICANT: Jorgensen, Steen Troels
4      Rasmussen, Michael Dolberg
5      Andersen, Jens Tonne
6      Olesen, Peter Bjarke
7      Clausen, Ib Groth
9 <120> TITLE OF INVENTION: Improved Bacillus Host Cell
11 <130> FILE REFERENCE: 10297.204-US
C--> 13 <140> CURRENT APPLICATION NUMBER: US/10/510,941
C--> 13 <141> CURRENT FILING DATE: 2004-10-08
13 <160> NUMBER OF SEQ ID NOS: 22
15 <170> SOFTWARE: PatentIn version 3.3
17 <210> SEQ ID NO: 1
18 <211> LENGTH: 1602
19 <212> TYPE: DNA
20 <213> ORGANISM: Bacillus licheniformis
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24 <221> NAME/KEY: CDS
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32 caaagcgtgg aacctgttaa aggacaagaa aaatcgacag ggatataaaa atcggcaagc      180
34 tttccaaagg gaaccggggc aggctgaagc tagcgctcac attggcgagc gatgcagcgg      240
36 tcgtgctgtt tgatgaacca tccggtctcc gatggtgagg gactcgacag tcaaaagcct      300
38 tcttacatat ttggagcttg acaagcgacac aatcgccatc gccacctatg aaattgaaca      360
40 aatattggat gtcgtcttaa atggccgaat tgaagcaaaa aaggatgtcg aacagctgcg      420
42 cgaggaatcc ggaatgtcgc ttttggaaatg gctgaaacgg tttattaaag aaaaaaattg      480
44 aaaaagcggg aggagaaaca ttg gaa aca ctt ttg gaa tta aaa aat gta tca      533
45      Leu Glu Thr Leu Leu Glu Leu Lys Asn Val Ser
46      1              5              10
48 aaa acg atc agg ggg aaa aag atc atc gag ggc ttg agt ttt gac gtg      581
49 Lys Thr Ile Arg Gly Lys Lys Ile Ile Glu Gly Leu Ser Phe Asp Val
50      15              20              25
52 cgg gca ggc gag ata ttc ggc ttc ctg ggg ccg aac ggc gcc gga aaa      629
53 Arg Ala Gly Glu Ile Phe Gly Phe Leu Gly Pro Asn Gly Ala Gly Lys
54      30              35              40
56 acg acg acg atc cgg atg att gtc gga cat atg agc att acc gcc ggt      677
57 Thr Thr Thr Ile Arg Met Ile Val Gly His Met Ser Ile Thr Ala Gly
58      45              50              55
60 gaa atc gcc gtg tgc ggc gtc agc gta aaa gaa aac ttt gaa aag gct      725
61 Glu Ile Ala Val Cys Gly Val Ser Val Lys Glu Asn Phe Glu Lys Ala
62 60              65              70              75
64 gca cgg cat atc gga gcg atc gtt gaa aac ccg gag ctt tat aaa ttt      773

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69 Leu Thr Gly Tyr Gln Asn Leu Gln Gln Tyr Ala Arg Met Thr Lys Gly
70      95      100      105
72 gtg acg aaa aag aaa att gac gaa atc gtc gag ctc gtc gga ttg aaa      869
73 Val Thr Lys Lys Lys Ile Asp Glu Ile Val Glu Leu Val Gly Leu Lys
74      110      115      120
76 aac agg atc aac gac aag gtc aaa acg tat tcg tta gga atg aga caa      917
77 Asn Arg Ile Asn Asp Lys Val Lys Thr Tyr Ser Leu Gly Met Arg Gln
78      125      130      135
80 agg ctt ggc ctt gcc caa agc ctt ttg cac gat cca aag ctg ttg att      965
81 Arg Leu Gly Leu Ala Gln Ser Leu Leu His Asp Pro Lys Leu Leu Ile
82 140      145      150      155
84 ctc gat gag ccg acg aac ggg ctt gat ccg gca ggt atc cgg gaa atc      1013
85 Leu Asp Glu Pro Thr Asn Gly Leu Asp Pro Ala Gly Ile Arg Glu Ile
86      160      165      170
88 cgt gac tat tta aga aag ctg acg aga gaa aag gga atg gcg gtc atc      1061
89 Arg Asp Tyr Leu Arg Lys Leu Thr Arg Glu Lys Gly Met Ala Val Ile
90      175      180      185
92 gtt tca agc cac ctg ctt tca gaa atg gag ctg atg tgc gac agg atc      1109
93 Val Ser Ser His Leu Leu Ser Glu Met Glu Leu Met Cys Asp Arg Ile
94      190      195      200
96 gcc att att caa aac gga aag ctc cgg gat att cag cat gtg cac gga      1157
97 Ala Ile Ile Gln Asn Gly Lys Leu Arg Asp Ile Gln His Val His Gly
98      205      210      215
100 ccc gct cgg gat gag aag aag cgc tat tat att caa gcg gac gac acc      1205
101 Pro Ala Arg Asp Glu Lys Lys Arg Tyr Tyr Ile Gln Ala Asp Asp Thr
102 220      225      230      235
104 cag gct ctc aca cgg gaa gcg gct gct ttc aga aag gtg aag gtt gac      1253
105 Gln Ala Leu Thr Arg Glu Ala Ala Ala Phe Arg Lys Val Lys Val Asp
106      240      245      250
108 gaa gcg gaa ggc ggg ata gag ctc agc att caa aag gat gaa gtg cct      1301
109 Glu Ala Glu Gly Gly Ile Glu Leu Ser Ile Gln Lys Asp Glu Val Pro
110      255      260      265
112 gat ttg att aaa cac ttg aca gac agc ggt gtt cgc tta tat gaa gtg      1349
113 Asp Leu Ile Lys His Leu Thr Asp Ser Gly Val Arg Leu Tyr Glu Val
114      270      275      280
116 aag gct gtg aac aaa tcg ctg gaa gac cga ttc ctg gaa atc acc gca      1397
117 Lys Ala Val Asn Lys Ser Leu Glu Asp Arg Phe Leu Glu Ile Thr Ala
118      285      290      295
120 gat aag gag gaa gct cag cat gtt taatctcatc gtaaataaat ggatcaaaat      1451
121 Asp Lys Glu Glu Ala Gln His Val
122 300      305
124 ttttaatcga aaaggcacat acgtcatgat cggaattttg ctgttagctg tcatcgggct      1511
126 gggcggtctc acaaagacga tcggagagac agaccaaacc acggactgga aaaaggaatt      1571
128 ggcgcaggaa ataaggacaa gggggcttag t      1602
131 <210> SEQ ID NO: 2
132 <211> LENGTH: 307

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133 <212> TYPE: PRT
134 <213> ORGANISM: Bacillus licheniformis
136 <400> SEQUENCE: 2
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139 1 5 10 15
142 Lys Lys Ile Ile Glu Gly Leu Ser Phe Asp Val Arg Ala Gly Glu Ile
143 20 25 30
146 Phe Gly Phe Leu Gly Pro Asn Gly Ala Gly Lys Thr Thr Thr Ile Arg
147 35 40 45
150 Met Ile Val Gly His Met Ser Ile Thr Ala Gly Glu Ile Ala Val Cys
151 50 55 60
154 Gly Val Ser Val Lys Glu Asn Phe Glu Lys Ala Ala Arg His Ile Gly
155 65 70 75 80
158 Ala Ile Val Glu Asn Pro Glu Leu Tyr Lys Phe Leu Thr Gly Tyr Gln
159 85 90 95
162 Asn Leu Gln Gln Tyr Ala Arg Met Thr Lys Gly Val Thr Lys Lys Lys
163 100 105 110
166 Ile Asp Glu Ile Val Glu Leu Val Gly Leu Lys Asn Arg Ile Asn Asp
167 115 120 125
170 Lys Val Lys Thr Tyr Ser Leu Gly Met Arg Gln Arg Leu Gly Leu Ala
171 130 135 140
174 Gln Ser Leu Leu His Asp Pro Lys Leu Leu Ile Leu Asp Glu Pro Thr
175 145 150 155 160
178 Asn Gly Leu Asp Pro Ala Gly Ile Arg Glu Ile Arg Asp Tyr Leu Arg
179 165 170 175
182 Lys Leu Thr Arg Glu Lys Gly Met Ala Val Ile Val Ser Ser His Leu
183 180 185 190
186 Leu Ser Glu Met Glu Leu Met Cys Asp Arg Ile Ala Ile Ile Gln Asn
187 195 200 205
190 Gly Lys Leu Arg Asp Ile Gln His Val His Gly Pro Ala Arg Asp Glu
191 210 215 220
194 Lys Lys Arg Tyr Tyr Ile Gln Ala Asp Asp Thr Gln Ala Leu Thr Arg
195 225 230 235 240
198 Glu Ala Ala Ala Phe Arg Lys Val Lys Val Asp Glu Ala Glu Gly Gly
199 245 250 255
202 Ile Glu Leu Ser Ile Gln Lys Asp Glu Val Pro Asp Leu Ile Lys His
203 260 265 270
206 Leu Thr Asp Ser Gly Val Arg Leu Tyr Glu Val Lys Ala Val Asn Lys
207 275 280 285
210 Ser Leu Glu Asp Arg Phe Leu Glu Ile Thr Ala Asp Lys Glu Glu Ala
211 290 295 300
214 Gln His Val
215 305
218 <210> SEQ ID NO: 3
219 <211> LENGTH: 1938
220 <212> TYPE: DNA
221 <213> ORGANISM: Bacillus licheniformis
224 <220> FEATURE:
225 <221> NAME/KEY: CDS

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233 atgctggacg gagtcgctga tgtcatcgctc acagacggct ttaccggtaa cgttgccctg      180
235 aaaacggctcg agggcgcggc gctgtccatt tttaaaatgc tgagaacgac gctgacttcg      240
237 agcttcacgg cgaagctcgc cgcttctgca ctgaagccga agctgaaaga aatgaaaacg      300
239 aaaatggatt actctgaata cggcggagcc ggattgttcg gcttaaaggc gcccgtcatc      360
241 aaagcgcacg gatcatctga cggacgcgcc gtttatcacg cgatccgccca ggccagagag      420
243 atggtcagcc aaaatgtcgc ggcatttatc gaagaaaaaa ttcaacaaaa agcagatgaa      480
245 tagtctggag gttttaacac atg ggc aag att gct ttt cta ttc ccg ggc caa      533
246                               Met Gly Lys Ile Ala Phe Leu Phe Pro Gly Gln
247                               1           5           10
249 ggt tcg cag cat atc ggc atg gga cac gaa ttg tat gaa aaa gaa ccg      581
250 Gly Ser Gln His Ile Gly Met Gly His Glu Leu Tyr Glu Lys Glu Pro
251                               15           20           25
253 aat gcg aag aag att ttt gaa gaa gcg gat caa acg ctt gaa aca aaa      629
254 Asn Ala Lys Lys Ile Phe Glu Glu Ala Asp Gln Thr Leu Glu Thr Lys
255                               30           35           40
257 ctg agc acc ctc atg ttt gaa ggg gat gca aag gaa ctg acg ctt aca      677
258 Leu Ser Thr Leu Met Phe Glu Gly Asp Ala Lys Glu Leu Thr Leu Thr
259                               45           50           55
261 tac aac gcg cag cca agc ctt tta acg gcg agc atc gca gcg ctt gaa      725
262 Tyr Asn Ala Gln Pro Ser Leu Leu Thr Ala Ser Ile Ala Ala Leu Glu
263 60                               65           70           75
265 aaa ctg aag gaa tac ggc att aaa gcc gac tat gcg gca ggt cac agc      773
266 Lys Leu Lys Glu Tyr Gly Ile Lys Ala Asp Tyr Ala Ala Gly His Ser
267                               80           85           90
269 ctc ggc gaa tac agc gca ttg gtc gct gcc ggc gcc ttg tcg ttt aaa      821
270 Leu Gly Glu Tyr Ser Ala Leu Val Ala Ala Gly Ala Leu Ser Phe Lys
271                               95          100          105
273 gat gcg gtt tat gcc gtc aga aag gcg ggc gaa ttc atg aat gaa gcc      869
274 Asp Ala Val Tyr Ala Val Arg Lys Arg Gly Glu Phe Met Asn Glu Ala
275          110          115          120
277 gtg ccg gcg gga gaa ggc gcg atg gcg gcc att ctc ggc atg gac agc      917
278 Val Pro Ala Gly Glu Gly Ala Met Ala Ala Ile Leu Gly Met Asp Ser
279          125          130          135
281 cag gcg ctg aaa gaa gtg acg gac aaa att tcc gaa gaa gga aac ctt      965
282 Gln Ala Leu Lys Glu Val Thr Asp Lys Ile Ser Glu Glu Gly Asn Leu
283 140          145          150          155
285 gtt cag ctc gcc aat ttg aac tgc cct ggg caa atc gtc atc tcg gga      1013
286 Val Gln Leu Ala Asn Leu Asn Cys Pro Gly Gln Ile Val Ile Ser Gly
287          160          165          170
289 aca gct aaa ggc gtg gag ctc gct tca gag ctt gcg aaa gaa aag ggc      1061
290 Thr Ala Lys Gly Val Glu Leu Ala Ser Glu Leu Ala Lys Glu Lys Gly
291          175          180          185
293 gca aaa cgc gcg att cct ctc gaa gtc agc ggg ccg ttc cat tct gag      1109
294 Ala Lys Arg Ala Ile Pro Leu Glu Val Ser Gly Pro Phe His Ser Glu
295          190          195          200

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297 ctg atg aag ccg gca gct gat aag ctt cgt gaa gtt ctt gat gcg tgc      1157
298 Leu Met Lys Pro Ala Ala Asp Lys Leu Arg Glu Val Leu Asp Ala Cys
299      205                      210                      215
301 acg atc aac gac gca gcc att ccg gtc gtc tcc aac gta acg gcc gac      1205
302 Thr Ile Asn Asp Ala Ala Ile Pro Val Val Ser Asn Val Thr Ala Asp
303 220                      225                      230                      235
305 ttt gta acg gat aaa gac gac att aag aat aaa ctg att gaa cag ctg      1253
306 Phe Val Thr Asp Lys Asp Asp Ile Lys Asn Lys Leu Ile Glu Gln Leu
307      240                      245                      250
309 tat tcc cct gta cgc ttt gaa gaa aca atc agc cgc ctg att gac gaa      1301
310 Tyr Ser Pro Val Arg Phe Glu Glu Thr Ile Ser Arg Leu Ile Asp Glu
311      255                      260                      265
313 ggc gtc acg acc ttc att gaa atc ggt ccc gga aag gtt ttg tca ggg      1349
314 Gly Val Thr Thr Phe Ile Glu Ile Gly Pro Gly Lys Val Leu Ser Gly
315      270                      275                      280
317 ctt gtg aag aaa gtg aac cgc aga gtc aaa acg att gct gta tca gac      1397
318 Leu Val Lys Lys Val Asn Arg Arg Val Lys Thr Ile Ala Val Ser Asp
319      285                      290                      295
321 ccg aac aca att gaa ctt gcc gtt caa acg ttg aag gag gaa aac gaa      1445
322 Pro Asn Thr Ile Glu Leu Ala Val Gln Thr Leu Lys Glu Glu Asn Glu
323 300                      305                      310                      315
325 aat gct gga aaa taaaacagcc gttgtgacag gagcctcaag aggaatcggc      1497
326 Asn Ala Gly Lys
329 cgcgcgatcg ccctggacct ggcgaaaaac ggagcaaattg tcgtcgtcaa ctacgcggga      1557
331 aatgaagcga aagcgaacga agtcgtagac gaaatcaaag cgctcggccg cgatgcgttt      1617
333 gctttttaaag cggacgtttc caatgcggat gaggttcagg cgatgatgaa ggaagcggtc      1677
335 ggacgcttcg gcacgcttga catccttgtc aacaatgcgg gcattactaa agacaatctg      1737
337 ttcatgagaa tgaaagaaga tgaatgggac gacgtcatta acataaaactt aaaaggtgtg      1797
339 ttcaattgtt caaaagctgt gacaagacag atgatgaaac aaagaagcgg ccggatcatc      1857
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347 <211> LENGTH: 319
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358      20                      25                      30
361 Phe Glu Glu Ala Asp Gln Thr Leu Glu Thr Lys Leu Ser Thr Leu Met
362      35                      40                      45
365 Phe Glu Gly Asp Ala Lys Glu Leu Thr Leu Thr Tyr Asn Ala Gln Pro
366      50                      55                      60
369 Ser Leu Leu Thr Ala Ser Ile Ala Ala Leu Glu Lys Leu Lys Glu Tyr
370 65                      70                      75                      80
373 Gly Ile Lys Ala Asp Tyr Ala Ala Gly His Ser Leu Gly Glu Tyr Ser
374      85                      90                      95
377 Ala Leu Val Ala Ala Gly Ala Leu Ser Phe Lys Asp Ala Val Tyr Ala

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VERIFICATION SUMMARY

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L:13 M:270 C: Current Application Number differs, Replaced Current Application No

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date